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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,210	06/20/2003	Gordan G. Greenlee	END920030030USI	9020

26502 7590 03/10/2006		EXAMINER	
IBM CORPORATION		GENTRY, DAVID G	
IPLAW IQ0A/40-3		ART UNIT	PAPER NUMBER
1701 NORTH STREET		2114	
ENDICOTT, NY 13760			

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2003*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4-6, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Kubo (U.S. Patent No. 6,986,139).

As per claims 1 and 6, Kubo discloses a method for monitoring a plurality of servers in a cluster and taking corrective action for said servers, said method comprising the steps of:

sending a request to one of said servers, and determining if said one server successfully handles said request and how long it took for said one server to handle said request (column 1, lines 36-46), and

if a response is received indicating that said one server successfully handled said request, but it took said one server longer than a predetermined time period to handle said request, notifying a dispatcher for said one server to reduce, but not eliminate, a workload of said one server (column 1, lines 36-46).

By changing which computer is executing the process, the workload of that computer is being reduced. This is done in order to effectively load balance the system (column 1, lines 15-29).

As per claim 4, Kubo discloses a method wherein said predetermined time period is such that if said one server successfully handles said request, but after said predetermined time period, this indicates that said one server is encumbered or overloaded with requests (column 1, lines 12-46).

It is understood that a request is sent whenever a computer is selected. Under load-balancing, the computer's response time is directly proportional to the number of activities the computer is executing.

As per claim 5, Kubo discloses a method wherein the step of sending said request to said one server is performed by sending said request to said one server, bypassing said dispatcher (column 1, lines 36-46).

The terminal that monitors the response from the computer (the dispatcher) is not what is sending the original request. This is shown by the phrase "a terminal monitors the response time" (column 1, line 43), which is differentiating this terminal from the circuit that is choosing which computer is to execute the process.

As per claim 8, Kubo discloses computer program product for monitoring a plurality of servers in a cluster and taking corrective action for said servers, said computer program product comprising:

a computer readable medium (column 1, lines 8-13);

first program instructions to send a request to one of said servers, and determine if said one server successfully handles said request and how long it took for said one server to handle said request (column 1, lines 36-46), and

second program instructions to determine if a response is received indicating that

said one server successfully handled said request, but took said one server longer than

a predetermined time period to handle said request, and if so, notify a dispatcher for

said one server to reduce, but not eliminate, a workload of said one server (column 1,

lines 36-46); and wherein

said first and second program instructions are recorded on said medium (column

1, lines 8-13).

It is understood that the instructions to perform these functions must be recorded

on a medium being read by the computers in the cluster.

Claims 14, 15, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated

by Holt et al. (U.S. Patent No. 6,601,061).

As per claim 14, Holt discloses a method for monitoring a plurality of servers in a

cluster (figure 1) and taking corrective action for said servers, said method comprising

the steps of:

setting a threshold equal to an integer greater than one (column 5, lines 57-62);

sending a request to one of said servers, determining that said one server did not

successfully handle said request within a predetermined amount of time, incrementing a

count, comparing said count to said threshold, determining that said count is less than

said threshold and therefore, taking no corrective action (column 5, line 57- column 6,

line 3); and

sending another request to said one server, determining that said one server did

not successfully handle said request within said predetermined amount of time,

incrementing said count, comparing said count to said threshold, determining that said

count equals or exceeds said threshold and therefore, taking corrective action (column

5, line 57- column 6, line 3).

As per claim 15, Holt discloses a method wherein said corrective action is to

remove said one server from said cluster or not send additional requests to said one

server (column 5, lines 57-62).

As per claim 19, Holt discloses a method wherein said other request is for

different information than the first said request (column 5, line 57- column 6, line 3).

Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Shin et al.

(U.S. Patent No. 6,434,713).

Shin discloses a method for monitoring a plurality of servers in a cluster and

taking corrective action for said servers, said method comprising the steps of:

sending a request to one of said servers, and determining if said one server

successfully handles said request within a predetermined time period (column 1, lines

29-39); and

if said one server does not successfully handle said request within said

predetermined time period or does not respond that it handled said request within said

predetermined time period, notifying a dispatcher for said one server to remove said

one server from said cluster or not to send any subsequent requests to said one server,

and automatically sending a request to said one server to restart said one server

(column 1, lines 29-39).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 3, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kubo in view of Shin et al.

Kubo is relied upon for reasons stated in the previous section.

As per claim 2, Kubo fails to disclose a system where the server is removed from

the cluster if the server fails to respond after a predetermined time.

Shin discloses a method further comprising the step of:

if said one server does not successfully handle said request within another

predetermined time period or does not respond that it handled said request within said

other predetermined time period, notifying said dispatcher to remove said one server

from said cluster or not to send any subsequent requests to said server (column 1, lines

29-39).

Suspending the operation of the server performs the same function as removing

the server from the cluster.

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to include the timeout mechanism as described by Shin in the

method described by Kubo. It would have been obvious because Shin's method is well-

known in the art as a timeout procedure, used as a constant check of the health of the

processors in the system (column 1, lines 29-35), and because Shin states a method similar to that of Kubo (column 2, lines 25-41). Furthermore, it would be obvious that the predetermined time of deeming a processor erroneous would be longer than the predetermined time for a slow response time due to a heavy load since the system would wait a significant time to make sure the processor is not sending a response before deeming it erroneous.

As per claim 3, Shin discloses a method wherein if said one server does not successfully handle said request within said other predetermined time period or does not respond that it handled said request within said other predetermined time period, further comprising the step of automatically sending to said one server a request to restart said one server (column 1, lines 29-39).

As per claim 7, Kubo fails to disclose a system where the server is removed from the cluster if the server fails to respond after a predetermined time.

Shin discloses a system further comprising:

means for if said one server does not successfully handle said request within another predetermined time period longer than the first said predetermined time period or does not respond that it handled said request within said other predetermined time period, and if so, notifying said dispatcher to remove said one server from said cluster or not to send any subsequent requests to said server (column 1, lines 29-39).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the timeout mechanism as described by Shin in the method described by Kubo. It would have been obvious because Shin's method is well-

known in the art as a timeout procedure, used as a constant check of the health of the

processors in the system (column 1, lines 29-35), and because Shin states a method

similar to that of Kubo (column 2, lines 25-41). Furthermore, it would be obvious that

the predetermined time of deeming a processor erroneous would be longer than the

predetermined time for a slow response time due to a heavy load since the system

would wait a significant time to make sure the processor is not sending a response

before deeming it erroneous.

As per claim 9, Kubo fails to disclose a computer program product where the

server is removed from the cluster if the server fails to respond after a predetermined

time.

Shin discloses a computer program product further comprising:

third program instructions to determine if said one server does not successfully

handle said request within another predetermined time period longer than the first said

predetermined time period or does not respond that it handled said request within said

other predetermined time period, and if so, notify said dispatcher to remove said one

server from said cluster or not to send any subsequent requests to said server (column

1, lines 29-39).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to include the timeout mechanism as described by Shin in the

method described by Kubo. It would have been obvious because Shin's method is well-

known in the art as a timeout procedure, used as a constant check of the health of the

processors in the system (column 1, lines 29-35), and because Shin states a method

similar to that of Kubo (column 2, lines 25-41). Furthermore, it would be obvious that the predetermined time of deeming a processor erroneous would be longer than the predetermined time for a slow response time due to a heavy load since the system would wait a significant time to make sure the processor is not sending a response before deeming it erroneous.

Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner (U.S. Patent No. 6,976,186) in view of Shin et al.

As per claim 10, Gardner discloses a method for monitoring a plurality of servers in a cluster and taking corrective action for said servers, said method comprising the steps of:

specifying a number of consecutive requests that can be sent to a storage device and not handled by said storage device within a specified time period for each of said requests, said number indicating that said storage device is down (column 3, lines 45-62; Note: the number of times is equal to two in this case);

sending a request to one of said storage devices, determining that said one storage device did not successfully handle said request within said specified time period, determining that said number has not yet been attained and therefore, taking no corrective action (column 3, lines 45-62; Note: no corrective action is taken, the request is simply resent); and

sending a subsequent request to said one storage device, determining that said one storage device did not successfully handle said request within said specified time

period, determining that said number has been attained and therefore, taking corrective action (column 3, lines 58-62).

Gardner fails to disclose a method where servers are being monitored rather than storage devices.

Shin discloses a method where servers are being monitored (column 1, lines 29-39).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method described by Gardner by substituting the storage system for a server as disclosed by Shin. It would have been obvious because using monitors to check servers is a very similar function as monitoring storage devices and it would be straightforward to use the same method for either.

As per claim 11, Shin discloses a method wherein said corrective action is to remove said one server from said cluster or not send additional requests to said one server (column 1, lines 29-39).

As per claim 12, Shin discloses a method wherein said corrective action is to attempt to restart said one server (column 1, lines 29-39).

As per claim 13, Shin discloses a method wherein said corrective action is to automatically send a command to restart said one server (column 1, lines 29-39).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holt et al. in view of Shin et al.

Holt is relied upon for reasons stated in the previous section.

Holt fails to disclose a method where the server is restarted.

Shin discloses a method wherein said corrective action is to automatically send a command to restart said one server (column 1, lines 29-39).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the restart operation as disclosed by Shin in the method described by Holt. It would have been obvious because Holt describes that there may be a failure with the system (column 6, lines 4-17), and restarting a computer is a commonly used method to attempt to correct the failure.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holt et al. in view of Smullen et al. (U.S. Patent No. 6,687,799).

Holt is relied upon for reasons stated in the previous section.

Holt fails to disclose a method where there is a memory dump.

Smullen discloses a method wherein said corrective action is to automatically request a memory dump from said one server (column 1, lines 18-40) and notifying a systems administrator or operator of said memory dump (column 4, lines 21-24).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the memory dump as described by Smullen in the method described by Holt. It would have been obvious because it is a necessary function when reloading a computer (column 1, lines 6-15) or after a failure (column 3, lines 23-27) to save data, such as the search data described in Holt.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David G. Gentry whose telephone number is (571) 272-2570. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SCOTT BADERMAN
SUPERVISORY PATENT EXAMINER